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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,188	12/27/2000	Tadayoshi Iijima	P107424-00019	2973

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EXAMINER	
UHLIR, NIKOLAS J	

ART UNIT	PAPER NUMBER
1773	

DATE MAILED: 03/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/748,188	IIJIMA, TADAYOSHI	
	Examiner	Art Unit	
	Nikolas J. Uhlir	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-8* is/are pending in the application.

4a) Of the above claim(s) *4-7* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,3 and 8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the amendment/RCE dated 02/06/2004. Applicant's amendment is sufficient to overcome the previous rejection under 35 U.S.C 103(a). Accordingly the previous rejection is withdrawn. however the case is not in condition for allowance in lieu of the new grounds of rejection.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 8 and 2-3 rejected under 35 U.S.C. 103(a) as being unpatentable over Yukinobu et al. (US5411792).

4. Claim 8 requires a transparent conductive film comprising a compressed layer on a support, wherein the compressed layer contains conductive particles and a resin binder, wherein the amount of resin is 0.03-9.3 parts by volume with respect to 100 parts by volume of the conductive particles, wherein the compressed layer is formed by compressing the conductive particles and the resin on the support with a compression force of $44N/mm^2$, and the compressed layer further comprises an impregnated transparent substance.

5. The examiner interprets the limitation, "the amount of resin is 0.03-9.3% by volume with respect to 100 parts by volume of said conductive particles" to refer to the amount of resin binder, not the sum of the amount of resin binder and impregnated transparent substance.

6. Yukinobu et al. (hereafter Yukinobu) teaches a method for making a transparent conductive film, wherein a coating solution containing ultrafine particles of a conductive oxide (equivalent to applicants claimed conductive particles) is formed onto a support (equivalent to applicants claims support), and the layer is dried and rolled with a steel roller to form a transparent conductive film (columns 2 and 3, lines 65-5). Specifically, Yukinobu teaches in examples 15-17 a method wherein a coating solution that contains ITO particles (known to be conductive) and an acrylic binder resin is applied to a polyimide support. After this solution is applied to the support, the film is then heat treated at 400^0C, during which the acrylic resin is carbonized. Then the film is rolled under a linear pressure of 100, 200, or 300kgf/cm respectively to form a conductive film. The film is then over coated with a transparent substance (equivalent to applicants claimed impregnated transparent substance) (see columns 13-14).

7. Yukinobu does not teach that 0.03-9.3 parts by volume of the resin binder with respect to 100 parts by volume of the conductive particles is present in the film. Further, Yukinobu does not teach the required compression force of 44/N/mm^2.

8. Regarding the volume of the resin binder, Yukinobu teaches that the amount of the resin binder present in the film is too much the film will not exhibit good resistivity, whereas if too little resin is utilized, the film is excessively porous and becomes hazy (column 1, lines 29-60). Thus, the amount of resin utilized in the film is a results effective variable. It is the examiners position that a after the heat treatment step utilized by Yukinobu in examples 15-18, a small residual amount of resin binder will remain.

9. Thus, in light of the teaching in Yukinobu that the amount of binder resin utilized impacts the properties of the transparent conductive film, it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the amount of binder resin in the film of Yukinobu in order to obtain a transparent conductive film that exhibited desired resistance and haze properties.

10. Regarding the required pressure treatment step and specific compression force. Yukinobu et al. teaches many specific embodiments (see examples 15-20) wherein a ITO containing ink is applied to the surface of a polyimide film to form a coating, after which the resulting film was heat treated, a further ITO containing dispersion is coated over the surface and dried, after which the film is subsequently rolled with a steel roller at a linear pressure of 100kgf/cm, 200kgf/cm, and 300kgf/cm. Unfortunately, without the compression length, the pressure utilized by Yukinobu (kgf/cm) cannot be converted to the applicants claimed units (N/mm^2). However, Referring to table 5 of Yukinobu, it is evident that as the roller pressure increases, the surface resistance and light transmission of the film of the film decreases. Thus, the examiner takes the position that the pressure exerted on the functional film is a results effective variable.

11. Therefore it would have been obvious to one of ordinary skill in the art to adjust the amount of pressure applied to the film of Yukinobu in order to obtain a film that exhibits a desired level of surface resistivity and light transmittance.

12. The limitation, "formed by applying a dispersion liquid which contains conductive fine particles and a resin onto a support and drying the liquid" in claim 2 is a product by process limitation that does not appear to be further limitation insofar as far as the

structure of the product is concerned. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP § 2113. Here, the limitations of claim 2 are directed towards an intermediate solution that is utilized to form the applicant's end product, namely the film required by claim 8. Equivalent precursor films containing conductive particles and 0.03-9.3 parts by volume of a binder resin can be manufactured in different ways and from different precursor solutions than that specifically required by the applicant in claim 2. It has not yet been established on the record that the solution claimed by claim 2 imparts some structural, chemical, or physical property difference to the end product. Accordingly, the examiner takes the position that the limitations of claim 2 are met as set forth above for claim 8.

13. Regarding the limitations of claim 3, wherein the applicant requires the support to be a resin. Yukinobu in examples 15-18 as stated above utilizes a polyimide film as a support. Thus, this limitation is met.

Response to Arguments

14. Applicant's arguments filed 01/14/2004 have been fully considered but they are not persuasive. The applicants arguments are fundamentally the same as those previously presented by the amendment/arguments dated 7/14/2003. The examiner

maintains the rebuttal of those arguments as set forth in the prior office action dated 10/16/2003.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolas J. Uhlir whose telephone number is 571-272-1517. The examiner can normally be reached on Mon-Fri 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J. Thibodeau can be reached on 571-272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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